

Lesson Preparation book Computer

3rd.Prep - First Term 2023 - 2024





Teacher's Biography

Name:	••••••	
School:	••••••	••••••
The educational admin	istration:	•••••
Qualification:	•••••••••••	••••••
Teaching Subject:	••••••	•••••••••••
Comprehensive Schoo	l:	••••••
The school to which he	is delegated:	•••••••••••••••••••••••••••••••••••••••
Date of appointment:	••••••	••••••
The job is on the staff:	••••••	••••••
Teacher Code:	•••••••	•••••
Mobile Number:	•••••••	••••••
Teacher S	upervisor	School Principal

Daily class schedule



Session Day	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eightieth	Ninth
Saturday									
Sunday									
Monday									
Tuesday									
Wednesd ay									
Thursday									

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Saturday									
Sunday									
Monday									
Tuesday									
Wednesd ay									
Thursday									

Teacher	Supervisor	School Principal



The General Objectives of Computer

At the end of the second term the student will be able to:

- Providing students with the appropriate amount of scientific and basic knowledge and skills related to information technology.
- Develop basic scientific thinking skills with a focus on modern technological skills through their interaction with the computer.
- Training students to work in a team by practicing computer techniques.
- Developing self-education skills in order to access the correct information by themselves through the use of computers.
- Developing students' awareness of the importance of using computers in all areas of life.
- Students' appreciation of the role that computers play in problem solving.
- Students familiarize themselves with the computer and deal with its programs without intimidation.
- Developing the Egyptian personality capable of facing the challenges of the third millennium in the technology and information revolution.
- Acquiring the right ethics and behaviors in dealing with others through the means and tools of information and communication technology.

Teacher	Supervisor	School Principal



At the end of the second term the student will be able to:

☐ Knows the problem Definition				
☐ Defines the stages of problem solving stages				
☐ Writes the steps to solve the algorithmic problem				
draws a flow chart that expresses the steps of the solution				
☐. Explain what is meant by programming language				
Learn what Visual Basic.NET is				
☐ Defines the most important components of the IDE display				
☐ Lists what the .NET framework provides				
☐ Recognize the properties window Properties window				
selects the property Property appropriate.				
☐ Choose the appropriate value for the property Property				
☐ differentiate between properties Properties that distinguish				
each control tool				
☐ Handles the code window Code Window				
☐ Defines what is meant by an event handler Event handler				
sets Controls propertiesProgrammatically				
Teacher Supervisor School Principal				

Session

Class





Strategy

Teaching aids

Dialogue and discussion –
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Unit One (Problem Solving)
Lesson (1) Problem Solving

Lesson objectives: By the end of the lesson, the student should be able to:

- Known problem Definition
- Specifies stages of problem solving
- Find solutions to some life problems

Warm up: What are your steps to solve a problem?

Lesson Presentation

- Problem definition: Problem is a situation that requires a solution or an objective you want to achieve through following consecutive steps sequentially.
- Problem solving: Problem Solving is the steps, activities, and processes to be done to reach an output or objective.
- ☐ Problem solving stages:
- (1) **Problem Definition**: Problem definition implies the identification of required outputs, available inputs and, arithmetic and logical operations to be executed.
- (2) Algorithm Preparation: Algorithm is one of the methods used to solve a problem through logically arranged procedures (Flowchart).
- (3) Program Design: Having drawn a "Flowchart" to solve the problem, using a computer; we have to translate this flowchart into one of the programming language
- (4) Program Testing: During writing a program we unintentionally make some mistakes e.g. writing a minus sign (-) instead of (+). We cannot detect errors unless we begin entering data to the program with previously known results; and compare the results of the current program to those of the well-known results and so you can discover the errors and correct them.
- (5) **Documentation**: This step includes writing all steps taken for solving the problem that include: given Input, output, plan for solving the problem, drawn flowchart, programming language used for coding, instructions, date of last modification of the program and, people who contribute to the program development process.

Evaluation: Complete:records all the steps to solve the problem

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Unit One (Problem Solving)
Lesson (2) Flow Chart



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Lesson objectives:

By the end of the lesson, the student should be able to:

- Know Flow chart.
- List flow chart instructions.
- Draw flow chart incorrectly.

Warm up:

What's a Flow Chart?

Lesson Presentation

☐ Flowchart

It is a diagram that uses standard graphical symbols to illustrate the sequence of steps required for solving a problem or specific question.

- Some advantages of Flowcharts:
- 1. Facilitating the reading and understanding of the problem and illustrating to the programmer what must be done.
- 2. Useful to explain the program to others
- 3. helping in documenting the program in better manner, especially if the program is complicated
- The most commonly used symbols as shown in the table:

Significance	Symbol
Terminal	
(input الجنوبوة output)	
(process)	
(Decision)	
(Flowlines)	$\uparrow \downarrow \longrightarrow \longleftarrow$

- To construct a flowchart, we should consider the following:
- 1. The flowchart should start with the Start symbol and end with the End symbol.
- 2. A,B,C are variable names. The variable refers to a memory storage that holds a value.
- 3. Equation: C = A + B, indicates the sum of the value of A, to the value of B, and stores the result in C.
- 4. Entering values in A and B is done by using the term "Enter", inside a parallelogram, like "Read" or "Input".

Draw a flow chart to)I(Exercise Sum two numbers to be entered and show the result Look Student's book p.9

Exercise (2) Draw a Flowchart to solve a first degree equation Look Student's book p.10

Evaluation: Complete: It is a diagram that uses standard graphical symbols

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Warm up:

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Unit One (Problem Solving)
Lesson (3) Branching

Lesson objectives: By the end of the lesson, the student should be able to:

• Known The concept of branching in flowcharts.

• Mention Solution steps for a program

Draw flow charts correctly What do we mean by branchi?

Lesson Presentation

The use of Branching (Decision) in Flowchart: -

There are many problems that contain a question requires a Yes or No, or requires branching to other processes determined by flowchart.

Exercise: - Draw a flowchart to print the word "successful" In the case of the degree input is greater than or equal to 50?

First: Define the problem

Output: print the word Successful

Input: the score X

Solution: If the value of X is greater than or equal 50; the word "Successful" will be printed

Second: Algorithm	Third: Flowchart
1- Start	Start
2- Enter X	Read X
3- If X>= 50 Then	Yes Yes
4-1PrintSuccessful	No "ناجح" Print
5- End	End

Evaluation: Complete: The symbol is used to represent

branching in flowcharts

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Unit One (Problem Solving)
Lesson (4) Following Branching

Lesson objectives: Byth

By the end of the lesson, the student should be able to:

- Known The concept of branching in flowcharts.
- Mention Solution steps for a program
- Draw flow charts correctly

Warm up:

How can branching be used to print the result of dividing two numbers?

Lesson Presentation

Draw a flowchart for a program that will calculate the division of two numbers. if the divisor equals (zero), the message displays "undefined".

First: Define the problem

Output: print the result of dividing two number "R" or print the word "undefined"

Input: Numeratoris "num1", denominatoris "num2".

Solution: if num2=0 then print "undefined", otherwise print the result of the division "R".

Second: Algorithm	Third: Flowchart
1- Start	Start
2- Enter the Numerator num1	Pood NA NA
3-If num2 = 0 Then	/ Read N1, N2 /
3- Print "undefined"	Is N2=0
4-Go to step 7	
5-R=num1/num2	R = N1 / N2 Print " undefined"
6-PrintR	Print R
7- End	
	End

Evaluation: Put $(\sqrt{})$ or (\times) :-

Flowcharts help to easily understand the problem, analyze it and turn it into a program ()

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Unit One (Problem Solving)

Lesson (5) Looping



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Lesson objectives:

By the end of the lesson, the student should be able to:

• Known The concept of iterative loops in flowcharts.

• Specify Solution steps for a program

Draw Flowcharts using iterative loops

Warm up:

How can loops be used?

Lesson Presentation

☐ Draw a flowchart to Print out the numbers from 1 to 3:-

First: Define the problem

Output: print numbers from 1 to 3

Input: number M

Solution: print number M and increment it by 1 then continue printing until the

value of M become greater than 3

Second: Algorithm	Third: Flowchart
1- Start	
<mark>2− M</mark> =1	Start 1
3-If M<=3 Then	M = 1
3-1Print M	yes
3-2 M=M+1	No M <= 3
3-3 Go To step (3)	Print M M=M+1
4– End	End

Evaluation: Put $(\sqrt{})$ or (\times) :-

 $ram\,means\,ensuring\,that\,the\,program\,is\,Documenting\,the\,prog$

free from errors()

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Unit One (Problem Solving)
Lesson (6) Following Looping

Lesson objectives: By the end of the lesson, the student should be able to:

• Known The concept of iterative loops in flowcharts.

Specify Solution steps for a program

Draw Flowcharts using iterative loops

Warm up: How can loops be used To print the sum of the integers

from 1 to? Presentation

Draw a flowchart to Print out the sum of integer numbers from 1 to 3?

Outputs: - Find the value of the sum of the numbers 1+2+3

Input: Input the starting value - N = 1

Enter the value of Sum = 0

Enter the value of the sumSum = Sum + N Enter the value of the increment -N = N + 1

Solution: Print Sum when the value of N = 3

When N > 3The repeat stops

Second: Algorithm 1- Start 2- N = 1 3- Sum = 0 4- Sum = Sum + N 5- N = N + 1 6- If N > 3 Then 6-1 Print Sum 7- Else 7-1 Goto step 4 8- End

Evaluation: Put $(\sqrt{})$ or (\times) :- You can use any Geometric shape to represent Algorithm when drawing flow chart ()





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Unit Two (Introduction to Visual Basic.net) Lesson (7) Following Looping

Lesson objectives:

By the end of the lesson, the student should be able to:

- Explain what is meant by programming language
- Identify the essence of Visual Basic.net
- Identify the main components of IDE screen

Warm up:

How can the solution steps be converted into programming commands that can be executed?

Lesson Presentation

The language of visual Basic .net: It is one of the high level programming languages and designed tobe easy to learn as its commands and instructions use English language vocabulary and it can be used in many applications such as: 1 - Windows applications 2 - Web applications

Programming and computer memory: Commands and instructions which are written in Visual Basic.net enable you to create objects in computer memory and every object has:

- 1- Properties such as (size-color-font) of the text written on the program interface.
- 2- Events such as click on a command button.
- 3-Procedures, each one contains commands and instructions which are carried out when calling this procedure.

So, the Visual Basic.net is considered:

Object oriented as its programmes work through objects in computer Memory.

Event Driven as commands and instructions are carried out as soon as certain event occurs.

- The Framework. Net provides the following:
- * Libraries through which we create the objects.
- * Runtime environment (called Runtime) in computer memory where Applications produced by the language of Visual Basic.net language work in.
- * Compilers which compile commands and instructions written in Programming language into machine code which the Computer deals with.

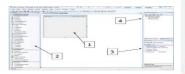
☐ Visual Basic . Net IDE:

The programmer of Visual Basic.net needs Integrated Development Environment (IDE) which provides tools and merits to the programmer that help him create applications (windows - mobile - web.....). Visual Studio represents IDE.

☐ Some components of Integrated Development Environment IDE:-

1– Form Window 2 – Toolbox Window 3- Properties Window 4-Solution Explorer

Evaluation: Complete: - IDE prefer to.....



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Unit Two (Introduction to Visual Basic.net) Lesson (8) Solve the questions of the second chapter

Lesson objectives:

By the end of the lesson the student should be able to:

- Explain what is meant by programming language.
- Acquire Some concepts for the second chapter
- Mention The most important components of a screen IDE

Warm up:

What are the most important topics of the second chapter?

First: Put (✓) in front of the correct sentence and (X) in front of the wrong one:

N	Question	Ansv	ver
1-	The VB.net language is one of the high level languages.	()
2-	The VB.net language is one of Event Driven languages.	()
3-	The VB.net language is the only high level language.	()
4-	The VB.net language is considered a high level language because it is easy to learn.	()
5-	The VB.net language is used in producing Windows applications and Web applications.	()
6-	The VB.net language is used in producing Web applications only.	()
7-	The VB.net language can't be used in producing Windows applications	()
8-	Every Object is characterized by certain properties and certain behaviour when a certain event occurs on it.	()
9-	Events and procedures which belong to any object in VB.net language are called properties.	()
10-	The name, the size and colour of an object are all samples of events that can occur to the object in VB.net language.	()
11-	The name, the size and colour of an object are all samples of properties of some objects in VB.net language.	()
12-	The Events are the commands and instructions which are carried out when a certain procedure occurs to the object in VB.net language.	()
13-	The procedures are the commands and instructions which are carried out when a certain procedure occurs to the object in VB.net language.	()
14-	Pressing click and D-click are samples of some events that can occur to an object in VB.net language.	()
15-	Framework.net contains Compilers, libraries and runtime environment	()
16-	Compilers in Framework. Net are considered the environment of runtime for applications which are produced in VB.net language.	()
17-	Compilers are programmes that translate commands and instructions written by the programmer from the high level language into machine language.	()

Evaluation: Evaluate students' answers.





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Unit Three (Controls)
Lesson (9) Properties of control tools...FORM

Lesson objectives: By the end of the lesson the student should be able to:

• Recognize the Properties Window.

• Choose the appropriate Property.

• Choose the proper value for the Property.

Warm up: What are the most popular control tools in Visual Basic?

Lesson Presentation

Form: It is the window on which the program interface is designed by placing various control tools on it, such as the button, label,, text box, etc

The Form has many properties which share in defining the form of program creen we want to create.

How to display the Properties window: -

From the View menu Choose Properties Windows

Press the F4 key

he controller and selectclick on t-Right Properties

From the standard toolbar, select Properties Windows icon

Here are some properties of the Form:

N	Property Name	Function
1	Name	Name of Form used in Code Window
2	Text	The appeared Text on the title bar of the Window
3	Backcolor	The background color of the Form.
4	Right to Left	The direction of Controls on the form Window From Right to Left.
5	Right to Left layout	The layout of Controls on the Form from right to left
6	MinimizeBox	It controls the appearance or disappearance of MinimizeBox of Form Window
7	MaximizeBox	It controls the appearance or disappearance of MaximizeBox of Form Window
8	ControlBox	It controls the appearance or disappearance of ControlBox of Form Window
9	FormBorderStyle	The Border style of Form Window
10	WindowState	It defines the Window State of the Form (Maximizing, Minimizing or normal)

designed by placing different control tools



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Unit Three (Controls)

Lesson (10) Properties of control tools...button, label, text box

Lesson objectives: By

By the end of the lesson the student should be able to:

- Differentiate between different controls
- adjust The appropriate Property for each tool
- Choose the appropriate value for the property

Warm up:

What is the difference between the command button and the text box?

Lesson Presentation

□ Button: - It is one of Controls which can be placed on the Form. When you click it, it does a certain task.

N	Property Name	Function
1	Location	The location of placing Button on the Form.
2	Size	Defining the height and width of Button on the Form.
3	Text	The appeared Text on the Button
4	BackColor	Choosing the backColor of the Button.
5	Font	Defining (shape, size and style) of the Text font appeared on the Button.
6	ForeColor	Choosing the ForeColor to the appeared Text on the Button

□ Label: – It is a tool used in showing a Text on the Form Window which can't be changed during program Runtime.

N	Property Name	Function
1	AutoSize	The Size of the Label is defined automatically according to the written Text if the Value of property equals true.
2	BorderStyle	Choosing the Border Style of the Label

☐ Textbox: - It is a tool used to insert (input) data from the user during program run time.

N	Property Name	Function
1	Maxlength	It defines the maximum number of letters which can be inserted in the TextBox
2	PasswordChar	It defines a symbol used instead of written text in case we have a password.
3	Multiline	Allows multiple lines within the text box control tool.

Evaluation: Complete: - Textbox control tool: is the only tool which has the property......

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Unit Three (Controls)

Lesson (11) Properties of control tools... list box, combo box

Lesson objectives:

By the end of the lesson the student should be able to:

- Distinguish between the list box and the combo box
- Adjust The Appropriate Property for each tool
- Mention Individual characteristics of each tool

Warm up:

What is the difference between the list box and the combo box?

Lesson Presentation

☐ ListBox:- It shows a list of items.

N	Property Name	Function
1	Items	A group of items shown in the ListBox
2	Sorted	It defines whether the elements in the list are sorted or not.
3	selectionMode	It defines whether it is possible to choose one item or more shown in the ListBox.

□ComboBox: -A ComboBox control displays a drop-down list from which one item can be selected.

N	Property Name	Function
1	Items	A group of items which are shown in comboBox.
2	AutoCompleteSource	It is a source of suggested items to select from.
3	AutoCompleteMode	It defines the method of list completing process.

Evaluation: Complete: -It is a list of items that drop down to

choose only one item





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esson (12) Properties of control tools ...group box, check box, Radio button

Lesson objectives: By the end of the lesson the student should be able to:

- Distinguish between the group box and the radio button.
- Adjust The Appropriate Property for each tool
- Realiz the importance of programming languages

Warm up: What is the difference between the list box and the combo box?

Lesson Presentation

☐ Group Box: - Is used to group other controls of same function together on the Form window.

Property	value	Effect of property appears	FormWindow after setting the property
Text Forecolor	النوع Choose the Red color	In design mode and runtime mode	₩ به اللوع
RightToLeft	yes		

Radio Button: - The program user selects one alternative only.

N	Property Name	Function
1	Checked	It shows whether Radio Button has been chosen or not.
2	Text	It is the Text shown on RadioButton

□Checkbox: -It is used for placing some alternatives to enable the user to select one Checkbox or more as shown in Figure:



Evaluation: Complete:-..... Is used to group other controls of same function together on the Form





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Unit Four (Code Window)
Lesson (13) Code Window

Lesson objectives: By the end of the lesson the student should be able to:

- Work with the Code window.
- Define the Event Handler.
- Adjust Controls' Properties programmatically.

Warm up: How can you write instructions and codes of the program?

Lesson Presentation

- ☐ Visual Basic.NET language provides a window through which we can write instructions and codes of the program called (code window)
- ☐ To open the (Code Window) of (Form1) perform the following:
- 1. Make sure that the window Form is active
- 2. From the keyboard press (F7)
- ☐ The Code window is displayed as shown in the following figure:
- ☐ Code Window
- Name of the file where codes are saved
- 2. Name of the file where the Form window interface is saved
- 3. The declaration of Class; its name is (Form1)
- 4. Space between two lines; to type codes for the Class (Form1)
- 5. The end of the class (form 1)
- Event Handler: It's a procedure which contains a code that is carried out when a corresponding event occurs.
- (1) The procedure name composed of (object name, event name).
- (2) End of procedure line.
- (3) What causes the call of the procedure (event occurrence).
- (4) Between the two lines shown; the code that will be executed on calling the procedure is written after the occurrence of the (Event).
- (5) The declaration of the class line (frmSquare).
- (6) The end of (class) line.

Evaluation: Complete: - It's a procedure which contains a code that is carried out when a corresponding event occurs.







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Unit Four (Code Window)

Lesson (14) Programmatically set properties

Lesson objectives:

By the end of the lesson the student should be able to:

 Mention The general form for setting the properties of tools programmatically.

How can you set the properties of the tools Programmatically?

- Define what is meant by the code window
- Adjust the properties of the control Programmatically

Warm up:

Lesson Presentation

☐ Setting the (Properties) programmatically

You can adjust the properties using the following syntax:

CONTROLNAME. PROPERTY = VALUE

The control or the

The property

The value

□Some exercises: -

- → Set the Text property of the tool(Ibl_Title) so that its value is "Egypt"

 Lbl_Title.Text = "Egypt"
- → Set the property(ForeColor) of the tool(lbl_Title) so that its value is(Blue). Lbl_Title. ForeColor = Color. Blue
- \rightarrow Adjust the (Font) property of the control tool (Lbl_Title) so that the font type is "Arial" Γ -and the font size is

Lbl Title.Font=NewFont("Arial",30)

→ Set the Visible property the tool of (lbl_Title) so that its value is (False).
Lbl Title. Visible = False

□Run the program - Program Testing Methods

- 1- Open the Debug menu Choose the Start Debugging command
- 2- On the Standard toolbar, select the Start Debugging icon
- 3- keyboard, press the On the F5 key

□Save the project

Open the File menu, choose the Save All command

Evaluation: Complete: - To save a project Open the...... menu, choose

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Lesson (15) General Revision

Lesson objectives: By the end of the lesson the student should be able to:

- Explain what is meant by programming language.
- Acquire Some concepts of what has been studied
- MentionThe most important controls

Warm up:

What are the most important terms and concepts that you learned?

Lesson Presentation

Q1: Choose the correct answer from the brackets

- 1- It contains Controls that can be inserted on the Form
 - (Module Properties window Solution Browser window Toolbox)
- 2 The computer only understands

(control Box - Machine Language - Visual Basic - none of the above)

(Event -properties -Procedures -Form)

- 4- The effect of the feature does not appear except in the operating mode (window State Text Font)
- 5- To hide the ControlBox for the Form for the choose the value .Control Box property

(None – False – True)

Q2: – Correct the underlined:

- Opens the Code Window We press the <u>F4 key</u>
- 2. The program is the last stage of solving the problem design
- 3. <u>Multiline</u> characters that can be Specifies the maximum number of property typed into atextbox
- 4. sorted property A set of items displayed on a List box.
- 5. stage It means entering data whose results are known Program documentation
 before to find out about errors

Evaluation: answers Evaluate students